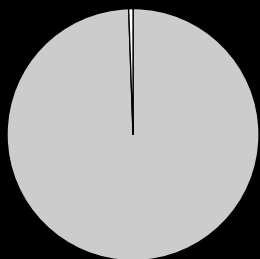
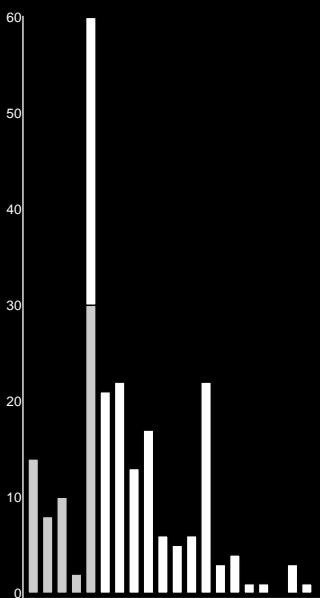


Missouri



Production tonnage 1978-1997

■ U.S. Total
■ Missouri Coal Production



Number of new permits 1978-1997

■ Interim Program
■ Permanent Program

Most agricultural/industrial polluted water problems reclaimed

Coal-bearing beds underlie 23,000 square miles of Missouri, about one third of the state's total area. Twelve out of more than 20 named coal seams have been or are being commercially mined. The remainder are too thin for commercial production. The coal is high-volatile bituminous, with reserves estimated to be six billion tons, 1.2 percent of U.S. coal reserves. Coal-bearing strata are generally thin seams which can be up to five feet thick. Typically, mined seams are about 28 inches thick.

Coal deposits were first mined in Missouri in the 1840's with the coal used primarily for domestic heating and blacksmithing. Production increased with the introduction of steamboats on the Mississippi. Coal production in 1917 was six million tons. Production has steadily declined from a high of nearly seven million tons in 1984 to 592,392 tons in 1997. Declining production is the result of several factors, including competition from other energy sources and the high sulfur content of Missouri coal. Today, coal-fired electric generating plants are the biggest consumers of Missouri coal.

The Missouri regulatory program was conditionally approved November 21, 1980, and fully approved January 17, 1983. Its Abandoned Mine Land program was approved January 29, 1982.

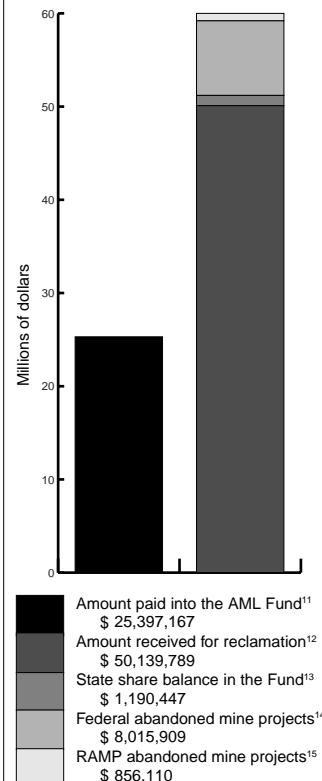
The Office of Surface Mining has completed all of the abandoned mine emergency abatement in Missouri. These projects have cost \$309,000 and eliminated six subsidence hazards.

Since 1977, more than \$41 million of Abandoned Mine Land projects have been completed in Missouri. The predominate problems eliminated were large-scale polluted water bodies and reclamation of lands causing clogged streams.

Abandoned Mine Land problems costing over \$100 million, including approximately \$40 million of high-priority projects, remain to be reclaimed in Missouri. Over 70 percent of the high-priority work needed is to stabilize subsidence-prone areas. Missouri receives the minimum program annual grant of \$1.5 million.

coal production¹⁰

	1978		1997		1978-1997 Rank
	Amount	Percent U.S. Total	Amount	Percent U.S. Total	
Tons Produced					
Surface	3,174,325	1.2%	592,392	0.1%	15
Underground	0	0%	0	0%	0
Lignite	0	0%	0	0%	0
Total	3,174,325	0.7%	592,392	0.05%	19
Number of Producing Mines					
Surface (bituminous coal)	17	0.5%	8	0.3%	14
Underground	0	0%	0	0%	0
Lignite (surface)	0	0%	0	0%	0
Total	17	0.2%	8	0.1%	16
Mine Production					
Average	186,725	26.2%	74,049	28.1%	
>1,000,000 tons	0	0%	0	0%	
300,000-1,000,000 tons	4	1.9%	1	0.4%	
<300,000 tons	13	0.2%	7	0.1%	



Active mining and reclamation¹⁶

	1978	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	Total	
Number of New Permits																						
Surface Mining	14	8	10	2	60	21	22	13	17	6	5	6	22	3	4	1	1	0	3	1	219	
Underground Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Acreage Permitted																						
Surface Mining	5,980	6,518	8,482		66	18,862	2,606	3,710	3,110	6,121	2,082	856	1,286	1,299	292	4,531	465	392	0	398	445	67,501
Underground Mining	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Acreage of Bond Release																						
Interim Prog. (final)	0	0	22	62	85	201	282	544	509	837	1,515	315	32	0	0	0	0	0	0	0	4,404	
Phase 1	0	0	0	0	0	0	0	0	0	1,398	1,785	1,598	1,033	1,248	786	1,111	180	641	2,053	1,267	13,100	
Phase 2	0	0	0	0	0	0	0	0	0	0	0	1,117	939	1,075	419	377	74	360	2,480	2,038	8,879	
Phase 3	0	0	0	0	0	0	0	0	0	0	0	0	1,737	0	227	30	5	338	3,430	2,459	8,226	
Inspections																						
Complete	NA	NA	NA	NA	NA	174	299	425	417	569	541	414	400	291	291	272	286	270	167	140	4,956	
Partial	NA	NA	NA	NA	NA	197	443	608	614	813	978	766	730	607	607	643	813	498	279	208	8,804	
Oversight	0	0	0	0	0	71	66	96	NA	109	69	50	52	52	40	77	68	87	20	45	902	
Citations Issued																						
NOV's	11	16	17	21	54	56	103	276	124	132	77	27	36	51	21	48	60	107	54	74	1,365	
CO's	0	0	0	0	1	1	5	56	17	110	5	0	17	24	5	1	7	110	11	23	393	

Abandoned coal mine reclamation 1977-1997¹⁷

	Reclaimed Problems			Remaining Problems	
	OSM Emergency	State Emergency	Non-Emergency	Number	Estimated Cost
Priority 1 & 2 (Protection of Public Health, Safety, and General Welfare) and Emergency Projects					
Clogged Streams (miles)	0	0	10.6	2.3	\$ 106,705
Clogged Stream Lands (acres)	0	0	1,491.8	15.7	144,932
Highwalls (feet)	0	0	58,312.0	30,349.0	1,528,224
Impoundments (count)	0	0	6.0	2.0	12,000
Piles & Embankments (acres)	0	0	489.4	189.8	5,411,591
Slides (acres)	0	0	0	0	0
Gases (count)	0	0	0	1.0	25,000
Equipment & Facilities (count)	0	0	27.0	9.0	44,680
Water Bodies (count)	0	0	10.0	8.0	218,601
Industrial Waste (acres)	0	0	70.5	30.9	365,200
Portals (count)	0	0	23.0	21.0	154,000
Polluted Water: Agriculture & Industrial (count)	0	0	31.0	11.0	585,720
Polluted Water: Human Consumption (count)	0	0	16.0	5.0	2,436,209
Subsidence (acres)	2.2	0	2.5	631.5	28,375,000
Surface Burning (acres)	0	0	19.0	0	0
Underground Mine Fires (acres)	0	0	2.0	0	0
Vertical Openings (count)	1.0	0	75.0	52.0	168,500
Total					\$ 39,576,362
Priority 3 (Environmental Restoration)					
Bench (acres)	0	0	0	2.0	\$ 28,000
Industrial Waste (acres)	0	0	2.9	8.7	38,061
Equipment & Facilities (count)	0	0	4.0	27.0	193,602
Gob (acres)	0	0	129.2	121.4	3,476,587
Highwall (feet)	0	0	16,824.0	186,176.0	21,061,568
Haul Road (acres)	0	0	1.4	73.3	278,978
Mine Opening (count)	0	0	0	17.0	34,000
Pit (acres)	0	0	88.9	443.3	3,779,153
Spoil Area (acres)	0	0	1,291.8	5,939.3	13,335,814
Slurry (acres)	0	0	69.0	18.9	181,500
Slump (acres)	0	0	0.3	415.6	19,711,200
Water (gallons/minute)	0	0	86.0	384.0	720,501
Total					\$ 62,838,964